REMARKS

I. Amendments to the claims:

Applicants propose to amend independent claim 12 in order to emphasize that the spacing between consecutive electrodes is sufficiently large so that electrical effect measured thereby are influenced by water surrounding the well beyond the casing in order to predict the arrival of a salt water front.

Applicants propose to add a new independent claim 22. This claim is clearly based on the description, in particular page 7 line 33 to page 8 line 25.

New matter has not been added by way of these amendments.

For sake of clarity, amendments to the claims are reflected in the enclosed listing of claims.

II. Prior Art:

It is respectfully submitted that independent claim 12, as amended, would not have been anticipated or rendered obvious to a person of ordinary skill in the art of over the teachings of Patey et al. (US 6,158,276) in view of Thompson (US 2,733,201) taken alone or in combination. Indeed, these references taken alone or in combination do not disclose, suggest, teach or motivate the skilled person to obviously derive the features of independent claim 12 as amended and/or independent claim 22 as presented herewith. It is not a mere matter of design choice to have sufficiently large spacings of the electrodes.

Patey et al. teach a measuring apparatus comprising sensors housed in modules screwed together. Patey et al. are mainly interested by the modularity, interchangeability and robustness of the apparatus. The apparatus is coupled to surface equipment trough a multi-conductors cable. The apparatus is lowered into the well or borehole. In order to measure the parameters of the liquid, e.g. water filling the well or borehole, the sensor needs to be exposed to the liquid in the borehole by means of window provided in the wall of the modules. Thus, Patey et al.' measuring apparatus only enables local measurement of the liquid parameters when the sensors in the modules are exposed to the liquid and not beyond the wall of the modules. Further, Patey et al are totally silent about measurement of salinity as performed by the present invention in order to

predict the arrival of a salt water front. To the contrary, Patey et al only enable to determine when the water front is arrived, namely when the salt water fill in a module dedicated to salinity measurement.

Thompson teaches an apparatus comprising a conductivity cell for measuring salinity of liquid, e.g. water. Thomson is interested in providing a robust apparatus, in particular by preventing damages to the electrodes by encasing them into a rugged protective housing. The housing comprises a plurality of ports so that a measuring chamber is filled by water when the apparatus is immersed. Thus, Thompson's apparatus only enables local measurement of the liquid salinity when the electrodes in the chamber are exposed to the liquid and not beyond the housing. Further, Thomson is totally silent about measurement of salinity as performed by the present invention in order to predict the arrival of a salt water front. To the contrary, Thomson only enables to determine when the water front is arrived, namely when the salt water fill in the chamber.

Consequently, it is hard to understand how the invention would be rendered obvious to a person of ordinary skill in the art when considering the teachings of Patey et al, and Thompson taken alone or in combination.

As a conclusion, claim 12 and 22 are allowable over the prior art and dependent claims 13-21 are allowable for at least the same reasons.

CONCLUSION

Applicants are of the opinion that the application is now deemed to be in condition for allowance, and notice to that effect is solicited.

Respectfully submitted,

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Victor Segura, Reg. No. 44,329
Schlumberger Technology Corporation
200 Gillingham Lane, MD #9
Sugar Land, TX 77478
Telephone: (281) 285-4562
Facsimile: (281) 285-8821